

### **Amendments to the Claims**

Please amend the claims in the manner indicated.

1. (currently amended)      A method comprising:
  - forming a trench in a substrate;
  - forming at least one metal trace on a surface of the substrate adjacent the trench;
  - providing at least one metalized surface along said trench; and
  - activating a bonding material having a metalized capping surface to bond said bonding material to said substrate such that said metalized capping surface is attached to said at least one metal trace and is located substantially only over said trench.
2. (original)    The method of claim 1, wherein said substrate comprises a printed circuit board.
3. (original)    The method of claim 1, wherein said substrate comprises a dielectric material.
4. (original)    The method of claim 3, wherein said trench is formed by selectively removing portions of said dielectric material.
5. (previously presented)    The method of claim 1, wherein said at least one metalized surface comprises sidewall surfaces and a bottom surface of a waveguide structure.

6. (previously presented) The method of claim 1, wherein said metalized capping surface on said bonding material is formed by applying a metal coating on said bonding material and selectively removing portions of said metal coating such that said metalized capping surface remains on said bonding material substantially only in places to be located over said trench.

7. (previously presented) The method of claim 1, wherein said metalized capping surface on said bonding material is formed by selectively placing said metalized capping surface on said bonding material.

8. (original) The method of claim 1, further comprising filling said trench with a material.

9. (currently amended) A method comprising:

forming a trench in a printed circuit board substrate, said trench having a first side surface, a second side surface and a bottom surface;

forming at least one surface on said first side surface, said second side surface and said bottom surface of said trench;

forming a capping surface on a bonding material; and

forming said ~~bonding material~~ capping surface as a top surface aligned substantially only over said trench having said at least one surface, said top surface being different than said bonding material ~~at least one surface~~; wherein said forming said

capping surface comprises leaving a space between said bonding material and said substrate.

~~wherein said capping surface is aligned substantially only over said trench.~~

10. (previously presented) The method of claim 9, wherein said at least one surface comprises at least one metalized surface and said top surface comprises a separate top metalized surface, wherein said capping surface is a metalized capping surface.

11. (original) The method of claim 10, wherein said substrate comprises a dielectric material.

12. (original) The method of claim 11, wherein said trench is formed by selectively removing portions of said printed circuit board substrate.

13. (previously presented) The method of claim 11, wherein said forming said top metalized surface over said trench comprises affixing said bonding material having said metalized capping surface to said printed circuit board substrate by reflowing said bonding material such that said metalized capping surface forms a cap aligned over said trench.

14. (previously presented) The method of claim 13, wherein said metalized capping surface on said bonding material is formed by applying a metal coating on said bonding material and selectively removing portions of said metal coating such that said metalized

capping surface remains on said bonding material substantially only in areas to be located over said trench.

15. (previously presented) The method of claim 13, wherein said metalized capping surface on said bonding material is formed by providing said bonding material and selectively aligning said metalized capping surface on said bonding material.

16. (original) The method of claim 9, further comprising filling said trench with a material.

17. (currently amended) A method comprising:

forming a trench in a printed circuit board;  
forming at least one metal trace on a surface of the printed circuit board adjacent to the trench; and

forming a waveguide structure in said trench of said printed circuit board by bonding a bonding material having a metalized capping surface to said printed circuit board such that said metalized capping surface is attached to the metal trace and is located substantially only over said trench to form said waveguide structure.

18. (previously presented) A method of claim 17, wherein the method further includes metalizing walls of said trench.

19. (previously presented) The method of claim 18, wherein said bonding said bonding material includes heating said bonding material to affix said bonding material to said printed circuit board.

20. (canceled)

21. (original) The method of claim 17, further comprising filling said trench with a material.

22. (currently amended) A structure comprising:

    a printed circuit board, and  
    a waveguide structure provided within said printed circuit board, said waveguide structure including:  
        a trench within said printed circuit board;  
        at least one metal trace formed on a surface of the printed circuit board adjacent a top opening of the trench; and  
        a bonding material having a capping surface on at least a portion of said bonding material, the bonding material disposed on top of said trench with said capping surface attached to said at least one metal trace and aligned substantially only over said trench.

23. (previously presented) The structure of claim 22, wherein said trench is within said printed circuit board between a top surface of said printed circuit board and a bottom surface of said printed circuit board.

24. (previously presented) The structure of claim 22, wherein said waveguide structure includes material for walls of said waveguide structure such that said walls have reflective surfaces to enable guiding signals through said waveguide structure.

25. (previously presented) The structure of claim 24, wherein said waveguide structure comprises at least one metalized surface on at least one of a first sidewall, a second sidewall and a bottom wall and said capping surface is a metalized capping surface.

26. (original) The structure of claim 23, wherein said trench is filled with a material.

27. (canceled)

28. (previously presented) The structure of claim 22, wherein the bonding material comprises a material selected from a list consisting of an epoxy and an adhesive.

29. (canceled)

30. (previously presented) The method of claim 1, wherein the bonding material includes a material selected from a list consisting of an epoxy and an adhesive.

31. (canceled)

32. (previously presented) The method of claim 13, wherein said bonding material comprises a material selected from a list consisting of an epoxy and an adhesive.

33. (canceled)

34. (previously presented) The method of claim 17, wherein said bonding material comprises a material selected from a list consisting of an epoxy and an adhesive.